**Phase-4**

**Smart Public restroom**

import requests

import time

import random

import Adafruit\_DHT # Make sure to install the Adafruit DHT library

channel\_id = "YOUR\_CHANNEL\_ID"

write\_api\_key = "YOUR\_WRITE\_API\_KEY"

thing\_speak\_url = f"https://api.thingspeak.com/update?api\_key={write\_api\_key}"

# Function to send data to ThingSpeak

def send\_data\_to\_thingspeak(data):

try:

# Create a dictionary with the field number and data value

payload = {

'field1': data # Replace 'field1' with the appropriate field on your ThingSpeak channel

}

# Send an HTTP POST request to ThingSpeak

response = requests.post(thing\_speak\_url, data=payload)

if response.status\_code == 200:

print(f"Data sent to ThingSpeak: {data}")

else:

print(f"Failed to send data to ThingSpeak: {response.status\_code}")

except Exception as e:

print(f"Error sending data to ThingSpeak: {str(e)}")

# Simulated motion detection function

def motion\_detected():

return random.randint(0, 1) # Simulate motion detection (0 for no motion, 1 for motion)

# Function to read DHT sensor data

def read\_dht\_sensor(pin):

try:

sensor = Adafruit\_DHT.DHT22 # Use DHT11 or DHT22 based on your sensor type

humidity, temperature = Adafruit\_DHT.read\_retry(sensor, pin)

if humidity is not None and temperature is not None:

return temperature, humidity

else:

print("Failed to read DHT sensor data.")

except Exception as e:

print(f"Error reading DHT sensor: {str(e)}")

while True:

if motion\_detected():

temperature, humidity = read\_dht\_sensor(4) # Replace '4' with the GPIO pin connected to your DHT sensor

if temperature is not None and humidity is not None:

# Send temperature and humidity data to ThingSpeak

send\_data\_to\_thingspeak(temperature) # Sending temperature data to 'field1'

send\_data\_to\_thingspeak(humidity) # Sending humidity data to 'field2'

time.sleep(60) # Check for motion and read DHT sensor data every 60 seconds (adjust as needed)